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ABSTRACT

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INTEREST AND EVALUATIVE MEANING AS FACTORS IN THE ACQUISITION OF A SIGHT VOCABULARY

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Kindergarten Ss were assigned to three treatments. Group I learned words that were self-selected; Group IC learned words selected by children in Group I; and Group FC learned words common to the vocabulary of young children. Group I Ss scored significantly higher than the control group Ss, supporting the Ashton-Warner hypothesis. Group I ratings of evaluative meaning were in the direction predicted, but did not reach significance.

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The interest level of materials available to elementary school children has long been considered important in facilitating learning (e.g., Dewey, 1913). Although interest encompasses a variety of constructs such as meaning, meaningfulness and expressed interest, most educators in constructing or evaluating learning content attempt to appraise the interest level of the material for children. An increasing number, however, are utilizing the child's interests as an initial source for selecting material. The role of interest and meaning in sight vocabulary acquisition has been an important factor in the remedial approach of Fernald (1943) and [redacted] received additional attention following the publication of the instructional experiences of Ashton-Warner (1963).

The determination of the influence of interest and meaning on learning

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experiences, however, is complicated by the lack of consistent results from empirical research. The outcome of various studies testing the importance of affectivity in paired-associate learning has been mixed. Kott (1955) and Klugman (1956) contend that affectivity does not facilitate the rate of learning while Paivio (1968) suggested that other factors having a known relationship to learning were of greater importance. Sussenrath (1967), however, studying the effect of denotative and connotative meaning in paired-associate learning, found that both positive and negative meaning contributed to learning. Ansfield (1962) and Ansfield and Lambert (1966) reported data that affective meaning is an important variable in paired-associate learning when the first item in the pair was a lexical item already having a stable body of verbal meaning and the second a nonsense syllable; findings which are in accord with the theoretical positions of [redacted] Osgood, et al (1957) and Staats (1968), that evaluative meaning is a factor in learning when associations are made with previously neutral stimuli.

Although several of the above studies suggest the importance of interest and affectivity in paired-associate learning, the majority are only peripherally related to sight vocabulary development. Very little empirical research could be found that dealt directly with interest or evaluative meaning. Olson and Pau (1966) report that words having a more intense group interest rating were learned with less difficulty than words having a more neutral rating. Harris (1967, 1969) and Sheviakov (1970), on the other hand, reported non-meaningful differences. The major methodological criticism of these and previous studies, however, was that the words were not chosen by the S but by the experimenter, either directly or indirectly through the employment of group measures; judgments that are related in an unknown manner to the individual interests of S involved in the learning. No study to date seems to have demonstrated adequately that materials were selected in a manner suggested by Fernald and Ashton-

Warner or meet the criteria for determining the effect of the individual interests of the child doing the learning.

The current study considered three factors: the first composed of two levels of sex: the second, two levels of ability - high and low; and the third - three treatment levels. In the experimental level, "interest" (I) treatment each S learned seven words self-selected as words that S wanted to learn. Ss in the first control level, "interest control" (IC) treatment, learned a word list generated by an I treatment S. Each S in the second control level, "familiar control" (FC) treatment, learned a list of words common to the vocabulary of first and second grade children as determined by Finsland (1945), matched with words generated by an I S on the basis of word form, initial letter, and when possible, length and general configuration.

The present study was designed to test the following hypotheses:

I) Self-selected interest (I) words will be learned more readily than interest control (IC) or familiar control (FC) words.

II) Interest control (IC) words will not be learned more readily than familiar control (FC) words.

III) The difference between the learning scores of low ability male Ss in the interest treatment conditions and the two combined control treatment conditions will be significantly greater than the corresponding differences among high ability male Ss.

IV) The difference between the learning scores of low ability male Ss in the interest control (IC) and familiar control (FC) treatment conditions will not be significantly greater than the corresponding difference among high ability male Ss.

V) The difference between the learning scores of low-ability female Ss in the interest treatment condition and the two combined control treatment conditions will be significantly greater than the corresponding difference among high ability

female Ss.

VI) The difference between the learning scores of low ability female subjects in the interest control (IC) and familiar control (FC) treatment conditions will not be significantly greater than the corresponding difference among high ability female Ss.

VII) Self-selected interest (I) words will be rated as having more intensive evaluative meaning than interest control (IC) and familiar control (FC) words.

VIII) Interest control (IC) words will not be rated as having a significantly more intensive evaluative meaning than familiar control (FC)words.

The dependent variable for hypotheses I through VI was the number of correct responses in six anticipation trials on a paired-associate learning task. The dependent variable for hypotheses VII and VIII was based on word meaning as defined by a Semantic-Differential-like scale selected for the measurement of an evaluative dimension. The data were analyzed by means of directional planned comparisons. Each comparison was tested with alpha set equal to .025, thus for each source [illegible] .05.

METHOD

Design

The experimental design was a 2x2x3 factorial with two levels of sex, two levels of ability, and three treatments. High and low ability levels were determined by performance on the combined information subtests of the WPPSI and WISC. The three treatment levels differed in the procedures for generating learning task words. Ss were grouped in triads, with an experimental and two yoked controls in each triad.[1] Ability and sex were blocking variables.

[1]Although the data was collected in triads (I, IC and FC groupings) it was expected that the data would not be correlated. Post hoc justification for treating the data as independent was obtained through inspection of the average I, IC; I, FC; and IC, FC product moment correlations across sex by ability subgroupings, which were -0.04, -0.13 and -0.12 respectively.

Ability by treatment interactions were tested within sex in deference to cultural-developmental differences.

Subjects

The kindergarten population from two schools in a small midwestern community was selected. The combined information subtests of the WPPSI and WISC were administered to each student. The resulting distribution of scores for each sex served in establishing high and low ability subpopulations. Twenty-four Ss were randomly selected from each of the sex by ability subpopulations and randomly assigned to the treatment conditions; resulting in a total of 96 Ss, 8 in each of the 12 treatment by ability by sex cells.

Learning Task

Each S was requested to learn the correct phonological reading responses to seven words using a paired-associate paradigm, with the printed word serving as the visual stimulus and the verbally rendered decoding as the associated response.

Evaluative Task

Subsequent to the learning task, each S rated the learning task words for evaluative meaning on a Semantic Differential-like scale. Previous Semantic Differential research indicated the dominance of an evaluative dimension (Jakobovitz, 1966; Osgood, 1962; Suci, 1960) and that the standard assessment technique or a modification could be reliably used with younger Ss (DiVesta, 1966; DiVesta and Dick, 1966; Sheviakov, 1970). The evaluative dimension employed in the current study was Words that I like/ Words that I don't like. The scale consisted of four levels with the two central positions denoting less intense assessments of "like" or "dislike." Ss responded by marking the position of each word on forms with figures of facial expression denoting directional reference and intensity of feeling.

PS 006552

Procedure

Each S was individually tested on two separate occasions. The combined information subtests from the WPPSI and WISC were administered during the first session. Treatment groups were subsequently established and the learning task presented during the second session.

Learning task words for Ss in the I treatment were self-selected under the following directions: TELL ME, (name) , DO YOU KNOW HOW TO READ? WELL TODAY I AM GOING TO HELP YOU LEARN SOME NEW WORDS, BUT I WOULD LIKE YOU TO TELL ME WHAT WORDS YOU WOULD LIKE TO LEARN. IF YOU COULD LEARN TO READ ANY WORDS THAT YOU DON'T KNOW HOW TO READ NOW, WHAT WORDS WOULD YOU LIKE TO LEARN? When additional stimulation was required, the S was questioned concerning foods he liked to eat; what he likedto play; things he wished he had; what he would like to be; pictures he liked to draw; favorite animals, toys or stories; etc.

Each S in the IC treatment was presented with a set of words generated by and I S. FC Ss were presented with words common to the vocabulary of first and second grade children, as previously described. IC and FC instructions were modified as follows: TELL ME, (name), DO YOU KNOW HOW TO READ? WELL TODAY I AM GOING TO HELP YOU IN READING STORIES. HERE ARE SOME OF THE WORDS YOU MAY LEARN.

After each word was selected or presented, the S was requested to provide a definition to assure knowledge of the referent. In no instance was a word selected or presented which was not known by the S. Word lists initially consisted of 10 words, each word typed with primary size type (six characters per inch) on individual white 3 x 5 index cards. The first seven words generated by an I S were preferred for the learning task, with three additional words serving as substitutes for any of the first seven words known by the S. Prior to the learning condition, the 10 cards were mixed in a random fashion and presented

to the S at a rate of one card every five seconds with the instructions that the child read any word he recognized. The resulting I list was presented to the IC S and used in developing the FC word list, though again, in each instance, three substitute words were available if any of the printed words were currently known to IC or FC Ss.

The learning task consisted of one study trial and six anticipation trials. The number of trials and words was established following a review of available literature and informal pilot testing. During the study trial, each word was manually exposed for five seconds upon oral presentation of the correct phonological reading response. Ss were instructed to observe the word and repeat the response after the experimenter. During subsequent test trials each word was displayed for five seconds. At the termination of each interval, corrective feedback was provided. The inter-item interval was five seconds. The cards were shuffled between each trial to eliminate the potential for serial learning. The inter-trial interval was twenty-five seconds. During the test sequences, the S's responses were recorded as correct or incorrect. Spontaneous corrections were accepted if they occurred within the five second exposure. The dependent variable was the total number of correct responses in the six anticipation trials.

Subsequent to the learning task, Ss were requested to rate the learning task words plus three buffer words on a bi-polar evaluative dimension, Words that I like/Words that I don't like. The positive side of the scale was located on the right side of five scales and on the left side of five scales to reduce any perseveration tendency. The three buffer words preceded the learning task words. Detailed instructions are described elsewhere (Holman, 1972).

Scores were obtained by assigning a weight of one to ratings at the terminal positions of the scale and a weight of zero to central ratings. Therefore,

the possible range of the sum of the evaluative scores of the words on each learning task list could range from zero to seven. Thus a score of 0 would be given to a list in which none of the words were rated as having an intense evaluative meaning while a score of 7 would be assigned a word list consisting entirely of words rated as having an intense meaning. The ratings of the buffer words were not scored. The dependent variable for this analysis was then the sum of the weighted ratings given by each S to the seven words on his learning task list.

RESULTS

Learning Task

The dependent variable was total number of correct responses over the six anticipation trials. With six trials and seven words per trial, the theoretical range of scores was 0 to 42. The obtained range was 3 to 41, with a mean across all Ss of 18.6. The standard deviation across all Ss was 9.03.

The summary data (means and standard deviations) are presented in Table 1. The data were analyzed by planned comparisons, Table 2. One-tailed tests were performed for each of the six planned comparisons with alpha set at .025 for each comparison, yielding a learning task experiment wise alpha of .15. An examination of the means in conjunction with the results of the analysis of variance indicated that the major hypothesis of the study (that words self-selected by children on the basis of interest would be more readily learned than words selected as being of interest by a child other than the S or words common to the vocabulary of young children, was supported by the data ($F=4.85$, $df = 1/84$, $p < .014$, one-tailed). As a result of a 97.5% confidence interval, it appeared that the learning of I words in comparison with IC or FC words resulted in at least 0.5 more correct responses with the best estimate being an increase of 4.4 correct responses. A second hypothesis, that IC words

would not be learned more readily than FC words, was supported.

The differences between the scores of low ability Ss in the I treatment group and the combined IC and FC treatment groups was not found to be significantly greater than the differences between the scores of the corresponding high ability Ss (Hypotheses III and V), nor were differences between the scores of low ability Ss in the IC and FC groups found to be greater than the corresponding differences among the high ability Ss(Hypotheses IV and VI) for both sexes. See Tables 1 and 2).

Evaluative Task

The dependent variable was the sum of the weighted evluative ratings over the seven learning task words. With seven words and a rating of either 0 or 1 for each word, the theoretical range of evaluative scores was 0 to 7. The obtained range was 1 to 7 with a mean across all Ss of 5.3. The standard deviation across all Ss was 1.53.

The summary data (means and standard deviations) are presented in Table 3. The data were analyzed by planned comparisons, Table 4. One-tailed tests were performed for each hypothesis with alpha set equal to .025, yielding an evaluative task experiment wise alpha of .05. Examination of the means in conjunction with the results of the analysis of variance indicated that I words were not rated as having a more intense evaluative meaning than words in the IC or FC conditions ($F = 2.58$, $df = 1/84$, $p > .05$, one-tailed). Words in the IC condition were not found to have been rated as having a more intense evaluative meaning than words in the FC condition.

TABLE I

Means and Standard Deviations
for Learning Task

Sex	Ability	Form	Treatment			Total
			Interest	Interest Control	Familiar Control	
Girls	Low	M	18.1	17.0	15.9	17.0
		SD	8.6	9.4	3.4	
	High	M	27.8	22.0	17.8	22.5
		SD	9.4	9.0	10.7	
	Total	M	22.9	19.5	16.8	19.8
Boys	Low	M	18.8	17.1	12.4	16.1
		SD	9.8	5.8	8.1	
	High	M	21.4	14.2	20.5	18.7
		SD	12.3	7.8	10.6	
	Total	M	20.1	15.7	16.4	17.4
Total	Low	M	18.4	17.1	14.1	16.5
		SD	9.3	7.8	6.2	7.9
	High	M	24.6	18.1	19.1	20.6
		SD	10.9	8.4	10.6	10.0
	Total	M	21.5	17.6	16.6	18.6

TABLE 2

Analysis of Variance on Learning Scores
by Sex, Ability and Treatment

Source	SS	df	MS	F
Treatment (T)				
Hypothesis I	411.26	1	411.26	4.85($p<.014$)*
Hypothesis II	15.02	1	15.02	$F<1$
Sex (S)	133.01	1	133.01	
Ability (A) in Sex (S)				
Males	82.69	1	82.69	
Females	363.00	1	363.00	
S x T	52.52	2	26.26	
(A in S) x T				
Males				
Hypothesis III	0.00	1	0.00	$F<1$
Hypothesis IV	242.00	1	242.00	2.96($p>.05$)*
Females				
Hypothesis V	102.09	1	102.09	1.25($p>.75$)*
Hypothesis VI	19.53	1	19.53	$F<1$
Within	6860.37	84	81.67	
Total	8279.49	95		

*All p's are one-tailed

TABLE 3

Means and Standard Deviations
for Evaluation Task

Sex	Ability	Form	Treatment			Total
			Interest	Interest Control	Familiar Control	
Girls	Low	M	5.50	5.88	4.88	5.42
		SD	1.60	1.25	1.46	
	High	M	5.38	5.38	5.12	5.29
		SD	0.92	1.30	1.64	
	Total	M	5.44	5.62	5.00	5.35
Boys	Low	M	5.88	4.75	4.75	5.12
		SD	1.88	1.66	1.16	
	High	M	5.87	5.38	4.88	5.38
		SD	1.73	1.92	1.46	
	Total	M	5.88	5.06	4.81	5.25
Total	Low	M	5.69	5.31	4.81	5.27
		SD	1.75	1.47	1.32	
	High	M	5.62	5.38	5.00	5.33
		SD	1.38	1.64	1.55	
	Total	M	5.65	5.34	4.90	5.30

TABLE 4

Analysis of Variance on Evaluation Scores
by Sex, Ability and Treatment

Source	SS	df	MS	F
Treatment (T)				
Hypothesis VII	6.021	1	6.021	2.58($p > .05$)*
Hypothesis VIII	3.062	1	3.062	1.31($p > .10$)*
Sex (S)	0.260	1	0.260	
S x T	0.195	2	0.097	
Ability (A) in Sex (S)	0.937	2	0.469	
(A in S) x T	2.000	4	0.500	
Within	195.875	84	2.332	
Total	208.130	95		

*All p's are one-tailed

DISCUSSION

Learning Task

The major hypothesis of this study was supported; that words self-selected by children on the basis of interest would be more readily learned than words selected as being of interest by a child other than the S or words common to the vocabulary of young children.

The difference between the means of the I treatment and the combined IC and FC treatments on the learning task, although small in terms of raw score units (about 4.4), was approximately one half of a standard deviation (s = 9.03). Another way of looking at the improvement is to note that during each learning trial, Ss averaged nearly one additional correct response [redacted]. When converted to a percent estimate, the I Ss averaged nearly twenty-five percent more correct responses during the treatment period. Although the shift toward allowing the child to learn his own material is not solely for the purpose of making learning more efficient, the increase in learning probably reflects an approach of value to educators.

If individual interest can affect performance on a controlled learning task as in this study, the value of incorporating individual interests in a variety of learning tasks requiring greater S involvement over an extended period of time should be pursued. Although practical problems of implementation and control are difficult in extended research, particularly under classroom conditions, the additional study of long-term effects would be valuable.

Since the performance of the IC Ss was not superior to that of the FC Ss, the learning task data would be compatible with an interpretation that words generated by I Ss did not in themselves differ to any great extent from words that are familiar or common to the vocabulary of children in that age range.

Rather, the superior performance of I Ss might be attributed to the particular meaning of the respective words for each S, the possible potency of learning self-selected material, or the interaction of the factors. No attempt was made to determine the amount of variance that might be attributable to each of the above sources, a direction for future research.

Nevertheless, the superior performance of the I Ss must be attributed to aspects unique to that treatment: that each S, on an individual basis, had the option of selecting and learning materials of interest to him. Treatment differences cannot be attributed to differences in list difficulty or specific words since these variables were controlled.

Hypotheses III and V, the ability by treatment interaction contrasts within sex, were not supported. The support of hypotheses IV and VI is therefore of limited importance.

Evaluative Task

The major hypothesis, that words in the I treatment would be rated as having a more intense evaluative meaning than words in either the IC or FC condition, was not supported by the data. It should be noted that the difference in the group means was in the direction predicted by Hypothesis VII. Although the difference was not of sufficient magnitude to achieve statistical significance at the established level, (α = .025), the obtained alpha level (α = .051) clearly suggests the value of replication. Since Hypothesis VIII, (words in the IC condition would not be rated as having a more intense evaluative meaning than words in the FC condition) was subordinate, its significance or lack of it is relatively unimportant.

At least two approaches could be proposed in attempting to account for the failure to support Hypothesis VII. First, one could argue that the technique used in obtaining an evaluative rating was inappropriate: that the scale employed (words I like/words I don't like) may not be a sensitive measure of

evaluative meaning for kindergarten Ss. Perhaps an alternate scale or a combination of scales would have reflected such a dimension with greater accuracy. In addition, it was the experimenter's subjective opinion that certain of the children were unable to effect the four part discrimination. This failure might have been accounted for by the cognitive limitation of certain children, or inadequacies in the task instructions. Perhaps a series of two bi-polar decisions or a three level decision rather than a single four level discrimination would have been more effective at this age level. The mode of S response could be questioned. In the present study each S physically marked the rating scales. Other modes of responding, such as giving a verbal response to the experimenter, may facilitate discrimination. The above questions, subject to empirical investigation, are all relevant in considering the utility of Semantic Differential-like ratings with young children and should be considered in attempted replications.

Although the first approach (to question the appropriateness of the SD-like scale) is appealing and does take into account problems in using this type of instrument, a second (and more parsimonious) approach would be to argue that the effects of emotionality may be non-existent or very weak and easily overshadowed by other factors. The only accurate statement that can be made is that the hypothesized result was not obtained.

In general, this study has provided empirical evidence that children can learn verbal reading responses to self-selected interest words more readily than they can to words provided under two other conditions. In so doing, it offers some evidence for the importance of motivational factors in learning. In addition, it provides support for what Fernald and Ashton-Warner (and other good teachers) have known, that the degree of learning is a function of the significance that the material has for the child. The study also indirectly

adds to the validity of the concept of intrinsic motivation - motivational factors that arise from within the child. It leaves unanswered, however, the interesting question of the relationship between learning, interest, and evaluative meaning.

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